

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004- ____

FOR

MUSCO FAMILY OLIVE COMPANY AND
THE STUDLEY COMPANY
CLASS II SURFACE IMPOUNDMENTS
SAN JOAQUIN COUNTY

Waste Discharge Requirements Order No. R5-2004- ____ orders compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements. Failure to comply with this Monitoring and Reporting Program, or with the Standard Provisions and Reporting Requirements, dated September 2003, constitutes noncompliance with the WDRs and with the Water Code, which can result in the imposition of civil monetary liability.

A. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports, which do not comply with the required format, will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed at least once annually. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations shall precede the tabular summaries. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Method detection limits and practical quantitation limits shall be reported. Field and laboratory tests shall be reported in the semiannual monitoring reports. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

B. REQUIRED MONITORING REPORTS AND SUBMITTAL DATES

1. Semiannual and Annual Groundwater, Vadose Zone and Leachate Monitoring Reports

All semiannual and annual monitoring reports shall include all water quality data and observation collected during the reporting period and submitted per the **Reporting Due Dates** in Section B.6. of this Monitoring and Reporting Program. At a minimum the sampling and data collection in Tables 1 through 5 of this Monitoring and Reporting Program, Standard Provisions and Reporting Requirements, and Waste Discharge Requirements shall be reported.

2. Annual Monitoring Summary Report

The Discharger shall submit an Annual Monitoring Summary Report to the Board covering the previous monitoring year. The annual report shall contain the information specified in Standard Provisions and Reporting Requirements, Section 4 of the *“Reports to be Filed with the Board.”*

3. Facility Monitoring Report

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section F.4.f. of Standard Provisions and Reporting Requirements.

4. Response to a Release

If the Discharger determines that there is significant statistical evidence of a release (i.e. the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified), the Discharger shall immediately notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination and implement Response to Release section of the Standard Provisions and Reporting Requirements.

5. Water Quality Protection Standard Report

Any proposed changes in a statistical method or concentration limits for a constituent of concern or monitoring parameter a Water Quality Protection Standard Report shall be submitted and include the information required in Section C.1. of this Monitoring Reporting Program. Any changes to Water Quality Protection Standards shall be approved by the Executive Officer in a Revised Monitoring and Reporting Program.

6. Submittal Dates

Semiannual/Annual Groundwater, Unsaturated Zone, Surface Water and Leachate Monitoring Reports

Reporting Type	Sampling Frequency and Data Reported	Reporting Period	Report Date Due
Semiannual	Semiannual	1 January – 30 June	31 July
	Annual	1 July – 31 December	31 January

Annual Monitoring Summary Report

31 January

Facility Monitoring Report

15 November

Response to a Release

as necessary

Water Quality Protection Standard Report

90 days after 8 sampling events

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

- a. Identify **all distinct bodies of surface and groundwater** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the

Unit. The constituents of concern for all Units at the facility are those listed in **Tables 2 through 5** for the specified monitored medium. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

a. Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in **Tables 1 through 5** for the specified monitored medium.

3. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with §20415 of Title 27.

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

D. MONITORING

The Discharger shall comply with the monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, in accordance with Monitoring Specifications in Standard Provisions and Reporting Requirements. A minimum of 8 samples should be used to develop background concentrations for COCs. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which include quality assurance/quality control standards, that are acceptable to the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in **Tables 1 through 5**.

Method detection limits and practical quantitation limits shall be reported.

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The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Waste Discharge Monitoring

The Discharger shall monitor all wastes discharged to the Class II surface impoundments on a monthly basis and report the results in the semiannual and annual Detection Monitoring Reports:

Table 1 - Waste Discharge Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
Quantity Discharged	gallons	Monthly
Remaining Capacity	acre-feet	Monthly
Minimum Freeboard	Ft. & Tenths	Monthly

2. Surface Impoundment

Surface impoundment samples shall be collected in a convenient location at least 50 feet from the influent structure. Liquids in the surface impoundments shall be sampled for the following:

Table 2 - Surface Impoundment Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
<u>Field Parameter</u>		
Flow Rate	gallons per month	Monthly
Freeboard	Feet & Tenths	Monthly
Specific Conductance	µmhos/cm	Semiannually
pH	pH number	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Chloride	mg/L	Semiannually
Sodium	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Total Hardness	mg/L	Semiannually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Alkalinity	mg/L	Annually
Sulfate	mg/L	Annually

3. Groundwater

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with a Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table 3.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot.

Table 3 - Groundwater Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
<u>Field Parameter</u>		
Ground Water Elevation	Ft. & Hundredths, MSL	Semiannually
Temperature	°C	Semiannually
Specific Conductance	µmhos/cm	Semiannually
pH	pH number	Semiannually
Turbidity	NTU	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Chloride	mg/L	Semiannually
Sodium	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Total Hardness	mg/L	Semiannually
Calcium	mg/L	Semiannually

Table 3 - Groundwater Monitoring		
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Alkalinity	mg/L	Annually
Sulfate	mg/L	Annually

Table 3 parameters shall be monitored **quarterly** until a minimum of **8 samples** are collected to develop Water Quality Protection Standards (WQPS) as concentration limits in compliance with Title 27 CCR.

4. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with a monitoring plan approved by the Executive Officer. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring devices and background monitoring devices of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table 4. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. If water is not present in an unsaturated zone monitoring device at the time of monitoring, the Discharger shall indicate the device as dry in the regular monitoring reports.

Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

Table 4- Unsaturated Zone Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
<u>Field Parameter</u>		
Specific Conductance	µmhos/cm	Semiannually
PH	pH number	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Chloride	mg/L	Semiannually
Sodium	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Total hardness	mg/L	Semiannually
Calcium	mg/L	Annually

Table 4- Unsaturated Zone Monitoring		
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Alkalinity	mg/L	Annually
Sulfate	mg/L	Annually

All unsaturated zone monitoring devices shall be tested annually to demonstrate operation in conformance with waste discharge requirements. The results of these tests shall be reported to the Board and shall include comparison with earlier tests made under comparable conditions.

5. LCRS Monitoring

The LCRS sumps shall be inspected quarterly for leachate. Upon detection of leachate in a previously dry LCRS, the Discharger shall immediately collect a grab sample of the leachate and shall continue to collect grab samples of the leachate at the following frequencies thereafter. The LCRS shall be sampled and analyzed for the following:

Table 5 - LCRS Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
<u>Field Parameter</u>		
Flow Rate	gallons/month	Monthly
Specific Conductance	µmhos/cm	Semiannually
pH	pH number	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Chloride	mg/L	Semiannually
Sodium	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Total Hardness	mg/L	Semiannually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Alkalinity	mg/L	Annually
Sulfate	mg/L	Annually

All LCRSs shall be tested annually to demonstrate operation in conformance with waste discharge requirements. The results of these tests shall be reported to the Board and shall include comparison with earlier tests made under comparable conditions.

6. Surface Water Monitoring

The Discharger shall install and operate a surface water detection monitoring system where appropriate that complies with the applicable provisions of §20415 of Title 27 and has been approved by the Executive Officer.

For all monitoring points and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in **Table 5**. All monitoring parameters shall be graphed so as to show historical trends at each sample location.

7. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in section VIII B.h. and XII S. of Standard Provisions and Reporting Requirements. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by: "original signed by"
THOMAS R. PINKOS, Executive Officer

Date